

## Two New *Calocarabus* (Coleoptera, Carabidae) from the Alpine Region of Southern Gansu, China

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**Abstract** Two new species of the genus *Calocarabus* are described from the alpine region of southern Gansu, China, under the names *C. sementivus* and *C. nevestimus*.

The genus *Calocarabus* (subtribe Carabina of the tribe Carabini) comprises over 10 species, all having relatively small body, hypertrophic head and often metallically colored dorsal surface. They are found on the high mountains in the inland area of China, mainly from northwestern Sichuan to southern Gansu and southeastern Qinghai. Through the courtesy of two skillful carabidologists, Messrs. Igor BELOUSOV and Ilya KABAK, I recently had an opportunity to examine a series of carabid specimens collected from the alpine region of southern Gansu, and found two undescribed species belonging to the above genus. In this article, I will describe them under the names of *Calocarabus sementivus* and *C. nevestimus*.

For the application of the generic names of the subtribe Carabina, I follow the higher system proposed by IMURA (2002), and the abbreviations used are the same as those explained in previous papers of mine.

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### 1. *Calocarabus sementivus* IMURA, sp. nov.

(Figs. 1, 3, 4)

*Description.* Length: 15.0 mm (including mandibles). Upper surface of body reddish coppery, bearing yellow-greenish tinge on marginal areas of head, pronotum, elytra, as well as on bottoms of frontal furrows, depressed parts of pronotum and primary foveoles of elytra. Appendages black, though basal parts of antennae and mandibles are red-brownish.

Head hypertrophic as in the other members of the same genus, more distinctly so in female, with relatively small eyes and rather straightly protruded mandibles; frons sporadically scattered with shallow punctures; frontal furrows wide and deeply con-

cave, with surface irregularly scabrous behind the level of fronto-clypeal suture; vertex to neck irregularly rugoso-striate and not punctate, with a pair of depressions on each side at about the mid-eye level; retinaculum of right mandible bidentate, with the anterior tooth thicker and larger than the posterior; terminal segments of palpi a little more widely dilated in male than in female; penultimate segment of labial palpus bisetose; median tooth of mentum much shorter than lateral lobes, with apex sharply pointed; submentum asetose; antennae short, not reaching the basal third of elytra in male.

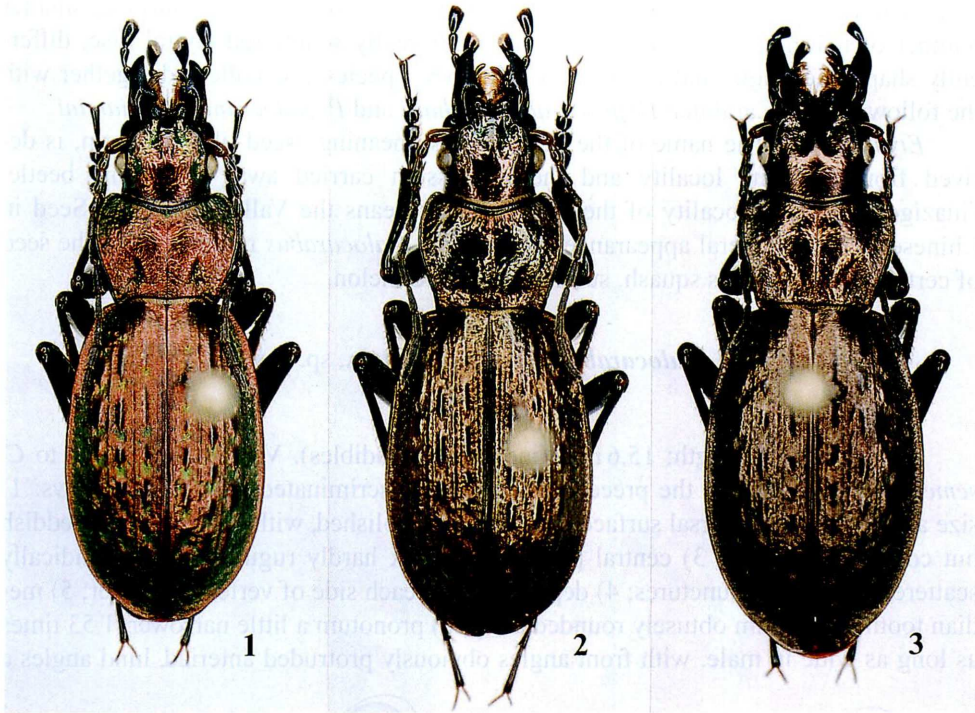
Pronotum transverse cordate, much wider than long and widest near the apical third; PW/HW 1.38, PW/PL 1.67, PW/PAW 1.34, PW/PBW 1.52, PBW/PAW 0.89; apical margin deeply emarginate, front angles obtusely rounded and not protruded anteriorly; lateral sides distinctly margined throughout, gently rounded in front and feebly sinuate towards hind angles which are subtriangularly produced posteriorly with rounded tips; disc weakly convex above, with surface weakly to strongly rugoso-scabrous; basal foveae rather deeply concave and median longitudinal line clearly impressed throughout; three to six marginal setae inserted on either side of pronotum, two to five on anterior and median portions and one before hind angle.

Elytra oblong-ovate, widest a little behind the middle, and more gradually narrowed towards bases than towards apices; EW/PW 1.39, EL/EW 1.51; shoulders rather distinct, lateral sides gently arcuate throughout, with margins narrowly reflexed above; sculpture triploid heterodyname — primaries the widest, irregularly segmented by large, shallow primary foveoles to form rows of moderately raised costae or callosities; secondaries much narrower than primaries and longitudinally contiguous though partly and irregularly interrupted by small foveoles; tertiaries the weakest, indicated by irregularly set rows of granules which partly become unclear; umbilicate series indicated by irregularly and sporadically set rows of small granules.

Episterna and sides of sternites almost smooth, sternal sulci unrecognized; metacoxa trisetose; basal four segments of male foretarsus dilated with hair pads on ventral surface, though the fourth one is much smaller than the other three.

Male genitalia as shown in Fig. 4; aedeagus slender, moderately arcuate, and gradually narrowed apically from the middle, with basal part rather abruptly curved ventrad; median portion subcylindrical and rather short, almost parallel-sided in lateral view, and widest a little before the middle; apical lobe short and robust, 1.15 times as long as wide, subtriangularly shaped, with almost straight ventral margin and gently rounded dorsal margin in lateral view, weakly hooked and compressed right laterad in dorsal view, and blunt at tip; OL small, weakly protruded dorsad, and faintly bilobed at tip; endophallus with ligulum indicated by longitudinally set rows of granules to form a narrow and short ridge; neither BL nor ML developed; PRE symmetrically inflated, not bilobed, and hairy on surface; PAR hemispherical, moderate in size, and symmetrically protruded on both sides; PP also moderately sized and symmetrical; AL hardly inflated; PL large, strongly protruded ventrad, adhered at centre to form a large single inflation with the tip slightly bilobed; AGG with a pair of short terminal plates without sclerotization and pigmentation.





Figs. 1–3. *Calocarabus* spp. from Guazigou in southern Gansu. — 1, *C. sementivus* (♂, holotype); 2, *C. nevestimus* (♂, holotype); 3, *C. sementivus* ? (♀).

Holotype: ♂, ca. 10 km southeast of Guazigou [瓜子沟] ( $33^{\circ}18'55''$ – $33^{\circ}19'40''$ N/ $104^{\circ}45'32''$ E), 3,450–3,595 m in altitude, in the southeastern part of Zhugqu Xian [舟曲县] near the borders of Wudu Xian [武都县] and Wen Xian [文县], of southern Gansu, China, 17–VII–2004, preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo (=NSMT).

*Further specimen examined.* 1 ♀ (16.4 mm in length), same data as for the holotype of *C. sementivus*, preserved in the collection of Y. IMURA.

This female (Fig. 3) was collected together with the holotype of *C. sementivus* and bears the features almost consistent with the same species. However, it shows character states intermediate between those of *C. sementivus* and of the other new species to be described in the following section, for example, in coloration of the dorsal surface, shape of the pronotum and sculptural condition of the elytra. Therefore, it is not designated as a paratype of the new species and the final conclusion will be suspended on its taxonomic account until we can examine enough specimens to know the range of individual variation of each species.

*Notes.* The present new species is most closely allied to *Calocarabus trichothorax* (BŘEZINA & IMURA, 1997, p. 8, figs. 4, 8–12), but readily discriminated from that

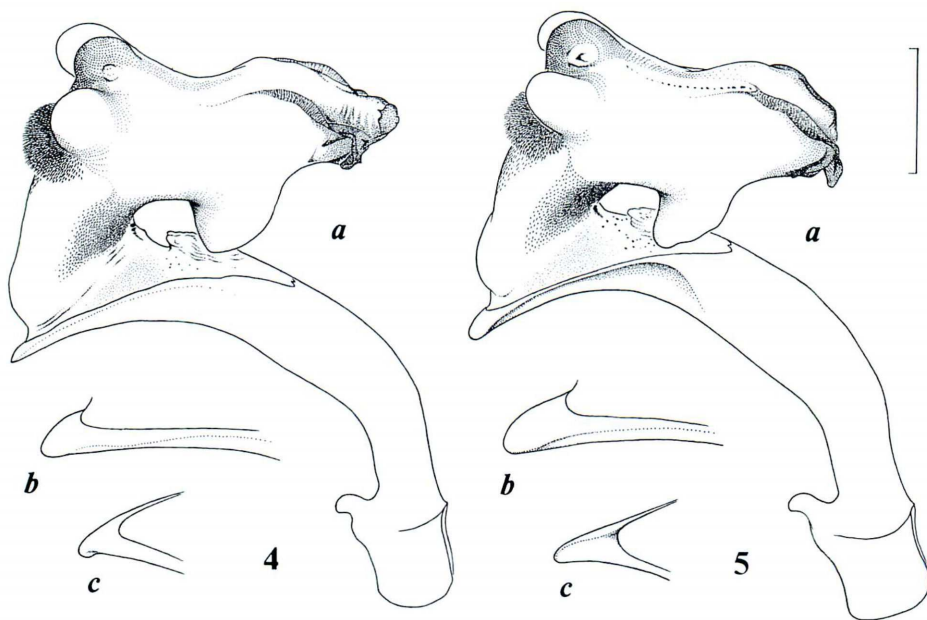
race in having much smaller size, different coloration of the dorsal surface, smaller number of marginal setae of the pronotum, differently sculptured elytral disc, differently shaped aedeagus and endophallus. The new species was collected together with the following two Carabina: *Hypsocarabus mikhaili* and *Pseudocranion benjamini*.

*Etymology.* The name of the new species, meaning "seed-like" in Latin, is derived from both its locality and the impression carried away from this beetle: Guazigou, the type locality of the new species, means the Valley of Melon Seed in Chinese, and the general appearance of this small *Calocarabus* reminds us of the seed of certain plants such as squash, sunflower or watermelon.

## 2. *Calocarabus nevestimus* IMURA, sp. nov.

(Figs. 2, 5)

*Description.* Length: 15.6 mm (including mandibles). Very closely allied to *C. sementivus* described in the preceding lines, but discriminated from it as follows: 1) size a little larger; 2) dorsal surface more strongly polished, with coloration not reddish but coppery brownish; 3) central portion of vertex hardly rugulose and sporadically scattered with small punctures; 4) depressions on each side of vertex shallower; 5) median tooth of mentum obtusely rounded at tip; 6) pronotum a little narrower, 1.53 times as long as wide in male, with front angles obviously protruded anteriad, hind angles a



Figs. 4–5. Male genital organ of *Calocarabus* spp. — 4, *C. sementivus*; 5, *C. nevestimus*. — a, Aedeagus with fully everted endophallus in right lateral view; b, apical part of aedeagus in the same view; c, ditto in dorsal view. Scale: 2 mm for a; 1 mm for b & c.



little narrower, and central portion of disc smoother and more strongly polished; 7) number of pronotal setae four to five on each side; 7) elytra with shoulders a little more distinct, primary callosities more clearly outlined and more strongly polished on surface, tertiaries more strongly developed to form longitudinally contiguous narrow ridge; 8) aedeagus (Fig. 5) more acutely curved ventrad at about apical quarter, and more strongly concave therefrom to apex in right lateral margin, with apical lobe longer, 1.5 times as long as wide, and not remarkably hooked right laterad in dorsal view

Holotype: ♂, ca. 10.9 km southeast of Guazigou (33°18'14"N/104°45'38"E), 3,340 m in altitude, in the southeastern part of Zhugou Xian near the borders of Wudu Xian and Wen Xian, of southern Gansu, China, 15–VII–2004, in coll. NSMT.

*Notes.* As mentioned in the preceding lines, the present new species is closely similar to *C. sementivus*. However, they are distinguishable from each other in several morphological features, i.e., differently shaped median tooth of the mentum, pronotum and aedeagus. These peculiarities are evidently of specific importance, not subspecific, even if the general features of the beetles are closely similar to each other. Besides, they were collected from the same valley though not strictly sympatric. These facts suggest that they should be regarded as two distinct species, not mere local races in a single taxon.

The present new species is sympatric with *Hypsocarabus mikhaili* and *Pseudocranion benjamini*, both of which seem to be the commonest Carabina in Guazigou.

*Etymology.* The new name is an anagram of *sementivus*.

## 要 約

井村有希：中国甘肃省南部の高所から発見されたキンスジキンオサムシ属の2新種。——2004年の夏に中国甘肃省南部舟曲县南東部の山岳地帯から得られたオサムシ標本のなかに、キンスジキンオサムシ属に属するふたつの未記載種を認めたため、それぞれに *Calocarabus sementivus* および *C. nevastimus* という名を与えて記載した。両者とも、既知の同属各種のなかでは、四川省北部から記載されたケムネキンスジキンオサムシ *C. trichothorax* に近いが、より小型で、背面の色彩、前胸背板側縁の剛毛数、上翅および♂交尾器の形態などに違いがみられる。また、今回記載された2新種もたがいにひじょうによく似ているが、下唇基節中央歯や前胸背板、♂交尾器などの形態が異なることによって識別される。

## References

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